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ABSTRACT

A discussion of the health services in the schools of eight European countries is presented in this report. The care of the preschool child is also examined. The working group assigned to this task considered different methods of evaluation, including those measuring quantity and quality of services and, in addition, discussed statistical means and methods and defined certain specific school health problems. Examples of child health problems suitable for study and follow-up within the school health services are considered. The group was also asked to discuss the tasks of existing school health staff and to pay special attention to the roles of doctors, nurses, teachers, parents, and pupils in school health work, in different types of health systems, both now and in the future. The general public health situation and socioeconomic structure of the eight countries are taken into consideration, and the future role of health systems and maternal and child health services is discussed. (JD)

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Evaluation of School Health Programmes

Report on a Working Group

Bucharest
2–5 August 1977

REGIONAL OFFICE FOR EUROPE
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Note

This report has been prepared by the Regional Office for Europe of the World Health Organization for governments of Member States in the Region and for those who participated in the Working Group on the Evaluation of School Health Programmes. A limited number of copies are available to persons officially or professionally concerned in this field of study from the WHO Regional Office for Europe, Scherfigsvej 8, 2100 Copenhagen Ø, Denmark.

The views expressed are those of the participants in the Working Group and do not necessarily represent the decisions or the stated policy of the World Health Organization.

The designations employed and the presentation of the material in this report do not imply the expression of any opinion whatsoever on the part of the Secretariat of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Where the designation "country or area" appears in the heading of tables, it covers countries, territories, cities or areas.

This report is also issued in French and Russian.

CONTENTS

		Page
1.	Introduction	1
2.	Background	3
	2.1 School health programmes	3
	2.2 Needs, expectations, and priorities	3
3.	Evaluation	4
	3.1 General aspects	4
	3.2 Evaluation studies	5
	3.3 Evaluation of special school health problems	8
4.	School health personnel and the school health team	13
	4.1 Medical staff	13
	4.2 Sociopsychological staff	14
	4.3 Parents and pupils	15
5.	The school health services within the child health system	16
	5.1 Models of integration	16
	5.2 Whole day and 5-day-week schooling	18
6.	Conclusions and recommendations	20
Annex I	The present European situation in school health statistics – Professor E. Maier and Dr J.-C. Vuille	23
Annex II	List of participants	29

1. INTRODUCTION

A Working Group on Evaluation of School Health Programmes was convened in Bucharest from 2 to 5 August 1977 by the Regional Office for Europe of the World Health Organization. The meeting was attended by 15 temporary advisers from Czechoslovakia, Denmark, Federal Republic of Germany, France, Hungary, Netherlands, Romania, Sweden, Switzerland, Turkey and Union of Soviet Socialist Republics, together with 3 staff members of the Regional Office and 1 representative from WHO headquarters (for list of participants, see Annex II).

Participants were welcomed by Dr M. Aldea, Vice-Minister of Health for Romania. He drew attention to the rapid improvement in the health and physical development of children that had taken place in the Region over the preceding centuries but emphasized that, at the same time, they had had to face a number of new environmental health hazards that might hinder their physical, mental or social development. It was one of the major tasks of the school health services to identify these hazards, to control them, and, most important, to eliminate them.

In opening the meeting on behalf of the Regional Director, Dr D.K. Sokolov, Chief, Strengthening of Health Services, referred to the active interest currently being taken by the Regional Office in the field of maternal and child health. Although the majority of the children in the Region could in many ways be considered as privileged compared to those in other areas of the world, there was still a gap between needs and demands on the one hand and the services available for school-age children on the other. The purpose of the present meeting to consider the evaluation of health services in schools was to define new trends in school health programmes and to reach appropriate conclusions on methods of work. The recommendations should be of great value in the continuing work of the Regional Office, and especially in relation to the Conference on the Child and the Adolescent in Society, planned for the second half of 1978.

In his address to the meeting, Dr P.S. Rönisch, WHO Regional Officer for Maternal and Child Health, referred to the great need for international co-operation in health, not only in research but also in planning and evaluating health activities. He also pointed out that the present trend in WHO was to plan for health programmes covering long periods; the meeting was a further step towards completing the coverage of the fields of child health and child care in the Region.[a,b]

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[a] **WHO Regional Office for Europe.** *Evaluation of maternal and child health services in certain countries.* Report on a Working Group, Copenhagen, 1974 (EURO 5103 (2))

[b] **WHO Regional Office for Europe.** *New trends in maternal and child health.* Report on a conference. Copenhagen, 1975 (ICP/HRP 004)

Dr J.C. Vuille was elected Chairman, Dr L. Turcanu was elected Vice-Chairman, and Dr L. Köhler acted as Rapporteur.

The Working Group was convened by the WHO Regional Office for Europe as part of its programme in maternal and child health. The task of this Working Group, following the European Conference on School Health Services[a] and the European Seminar on Child Health and the School,[b] was to evaluate the work done by school health services during the last 20 years in countries (both industrialized and developing) of the Region. This should contribute to a better understanding of the needs of health services for children and adolescents, and of the extent to which these are met in school. The work of this Group, together with that of three other working groups on the problems of children of age-groups 5–9 years (1975),[c] 10–13 years (1976),[d] and 14–18 years (1977)[e] will culminate in the Conference on the Child and the Adolescent in Society previously mentioned.

The Group's task was to consider different methods of evaluation, including both those measuring quantity and quality of services, and in addition to discuss purely statistical means and methods, to define certain specific school health problems, and to give examples of child health problems suitable for study and follow-up within the school health services. It was also asked to discuss the tasks of existing school health staff and to pay special attention to the roles of doctors, nurses, teachers, parents and pupils in school health work, in different types of health systems, both now and in the future. The changes in schooling conditions at the present time (half- and whole-day schooling, 5- and 6-day school week) were also to be considered. The Group was also asked to take into consideration the general public health situation and socioeconomic structure of countries and to define the future role of school health programmes and maternal and child health services. Certain special problems of developing countries and the problems of school health systems arising from the presence of children of migrant workers in their home or host countries were to be a further subject for discussion.

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[a] **WHO Regional Office for Europe.** *European Conference on School Health Services.* Copenhagen, 1955 (EURO 40.2)

[b] **WHO Regional Office for Europe.** *European Seminar on Child Health and the School.* Copenhagen, 1965 (EURO 40.3)

[c] **WHO Regional Office for Europe.** *Problems of children of school age (5–9 years):* Report on a Working Group. Copenhagen, 1976 (ICP/MCH 004)

[d] **WHO Regional Office for Europe.** *Problems of children of school age (10–13 years):* Report on a Working Group. Copenhagen, 1977 (ICP/MCH 006)

[e] **WHO Regional Office for Europe.** *Problems of children of school age (14–18 years):* Report on a Working Group. (In preparation)

2. BACKGROUND

2.1 School health programmes

The purpose of school health programmes is to promote, preserve and restore the health and functional capacity of the pupils. This purpose is achieved by:

(*a*) providing the optimal physical and social environment and educational conditions;

(*b*) promoting healthful behaviour through health education in its broadest sense; and

(*c*) providing school health services for the early detection of disease and impairment and for the comprehensive treatment of those health problems which can be dealt with only in close connexion with the school situation.

2.2 Needs, expectations, and priorities

Obviously, the above-mentioned activities are meaningful only if they are in accordance with the true needs of the pupils. These needs can best be defined in terms of health problems which can be prevented, treated or at least mitigated. Needs can thus not be assessed solely on the basis of disease prevalence; the actual implications for the child, together with the current state of the art and financial and other constraints, have also to be considered. On the other hand, school health programmes should also respond to some extent to the expectations of those primarily concerned, namely pupils, parents, and teachers, even if those expectations or demands do not correspond exactly to what experts would accept as true needs.

For practical reasons and in view of the limited resources available it is hardly ever possible to respond to all the needs and expectations which may have been defined. Priorities have to be established and expressed in terms of precise objectives. School health programmes are planned and implemented in accordance with such priorities, whether or not they have been explicitly stated.

It was fully agreed by the Group that the setting of these priorities should be the concern of the numerous parties involved, with their different medical, social, economic and political interests. Medical aspects of health priorities are still important, in some areas more than in others, but should never be allowed to be the only ones taken into consideration. There is still a need for doctors who can recognize diseases and impairments, but also a need for doctors who can apply their medical knowledge in the social context.

Thus, in the assessment of the objectives of school health programmes, it is necessary to use a broad team approach and also to consider the social and

socioeconomic aspects of the children's needs. However, to avoid undue professionalization, it is also necessary to take into account the "consumers" and their opinions since it will otherwise hardly be possible to determine the true health needs of schoolchildren and their parents, and the priorities to be assigned to those needs.

3. EVALUATION

3.1 General aspects

Any school health programme initiated with the honest intention of meeting certain of the pupils' needs must be subjected to a process of evaluation, which is nothing more or less than an assessment of achievements in relation to objectives. The degree of congruence between achievements and objectives is a measure of the effectiveness of a particular programme. A further parameter which should be assessed in the process of evaluation is cost/efficiency, or the ability of a programme to be effective while conserving resources.

Since both health problems and the ability to intervene are continuously changing in line with the development of society and science and sometimes also as a consequence of particular events in the local community (the Seveso disaster is a dramatic example of such a local event), evaluation cannot be a single effort at one point in time. It must be seen as a continuous or at least a repeated process, so that programmes can be adapted as rapidly as possible to prevailing needs.

The kind of information necessary for purposes of evaluation obviously depends on the types of objectives which have been defined. These, in turn, may relate to policies, activities, utilization or outcome. Ultimately, the outcome, i.e., the preservation or improvement of the pupils' health, is what really matters. Sometimes the relation between a public health activity and its result is simple and easily measurable, e.g., in the case of inoculations and reducing the incidence of disease. However, it is necessary to evaluate health in a more comprehensive way. Difficulties then usually arise because certain important aspects of health cannot easily be defined and assessed and also because health status is a function, not only of the health services but also of the many other factors involved – the socioeconomic level, nutrition, people's habits and attitudes, etc. It was agreed that these nonprofessional factors were very important, but might be difficult to assess. For these reasons evaluation frequently stops with an assessment of achievements in relation to activities and utilization. It was, however, unanimously agreed by the Group that such an evaluation was not adequate as a basis for the creation of optimal health services.

3.2 Evaluation studies

Several special studies of the performance of school health programmes have been conducted in various countries. In general, these studies have shown that school health programmes in developed areas still tend to concentrate their activities on problems of the past or on those for which school physicians were originally trained (mainly infectious diseases and physical disabilities), whereas adequate provision for the most urgent psychosocial needs is lacking.

3.2.1 *Present European situation in school health statistics*

One study on school health statistics in eight European countries carried out on behalf of the WHO Regional Office for Europe in 1974 is of special interest in this connexion, and an account of it is therefore included in this report (see Annex I).

One of the major conclusions of the study is that changes in school health programmes, if they occurred at all, were often prompted more by political or economic forces or by the personal enthusiasm of outstanding individuals, than by documented evidence of changing needs. Quite logically, then, it was not the results of the activities that were evaluated, but rather the activities themselves, e.g., the number of lectures given in health education, the number of examinations performed, the number of immunizations, etc. Performance with respect to such activities was generally judged to be good or satisfactory; in one of the countries visited, however, the objectives, although described in great detail in official texts, could not be achieved at all because of a serious lack of personnel.

Remarkable differences were found between the school health programmes of the eight countries both in quantitative and in qualitative terms, but it was impossible to relate these differences to corresponding variations in any indicators of the health status of the pupils. Moreover, significant differences existed not only between but also within countries.

As far as attitudes and expectations were concerned, a high degree of dissatisfaction among school physicians was noted in several countries. In a special study conducted in one country, a wide gap was found between the school physicians' low rating of their own work and the high expectations of teachers and parents. This unsatisfactory situation may well be taken as an indication that traditional school health programmes are not well adapted to the true needs existing at the present time. Many countries have therefore made serious attempts to evaluate their own programmes more thoroughly.

In the eight countries concerned, the following general trends in school health services were noted:

(*a*) The emphasis is definitely moving away from the detection of anomalies in schoolchildren and towards more active concern with pre-school

children. The school physician and his team should expand their field of action and try to detect and treat as many of the health problems as possible before the child enters school.

(*b*) Routine medical examinations of pre-school and schoolchildren are being replaced by a series of specific screening tests, designed for early detection of certain well-defined anomalies and performed at selected key ages. Many of these tests can be performed by auxiliary personnel at least as well as by physicians. The physician's main task will be the summing-up and interpretation of the results, and the communication of the implications to the parents and/or the child himself.

(*c*) Operational definitions of findings and diagnoses and of criteria for specific measures should be established. These definitions must necessarily be so detailed as to appear trivial. A continuous critical evaluation of the validity of the definitions is important as well as repeated checks on the compliance of the staff with the instructions. The quality of the statistics can be improved significantly if findings without any practical implications are disregarded. Only genuine health problems or known risk factors related to future health problems should be recorded.

(*d*) A number of promising technical approaches towards an integrated school health information system have been developed. Most systems have only just been introduced or have been in operation only for a short period, so that the actual impact of these systems cannot yet be evaluated. It would appear worthwhile, however, to carry out a thorough comparative analysis of these systems. The development of school health statistics in the European Region could be stimulated if the representatives of the centres concerned were invited by the Regional Office to submit detailed information about the functions and performance of their respective systems, so that a comprehensive report on them could be prepared.

The basic structure of health services is obviously different in different countries, and no one information system can be adapted to match every such structure. This, however, should not be taken to mean that each individual country has to devise its own system and to repeat all the errors which others have already made. A comparative report on the technical aspects of existing systems, prepared under the auspices of WHO, would be extremely valuable to any country intending to strengthen its system of school health statistics.

The Group also felt it important to point out that statistics on health services may often be misleading owing to regional differences and lack of uniformity in defining the variables. It is, in addition, obvious that many problems related to the health of schoolchildren cannot be resolved exclusively on the basis of routine statistics, however sophisticated the system. Carefully planned research and demonstration projects, limited in scope and time, should

be promoted, the ordinary staff playing an integral part in their planning and implementation.

3.2.2 *Other research projects on evaluation*

A few such research projects were presented in more detail. In one of these the pupils were examined by a medical health team several times during their school career. Their health problems were divided into five groups, ranging from "healthy" to "severely ill or handicapped". This system, although subjective and arbitrary, was thought to be an improvement compared to the purely diagnostic lists that are usually the result of such health examination programmes. In this system it was also possible to take into account the functional impact of various abnormalities on the pupils and their school performance. In addition, a change in the health grouping of pupils between starting and leaving school made it possible to evaluate the school health services, which should ensure that a child leaves school in a better state of health than when he arrived.

In another project, the school health team worked in close collaboration with the target population and identified the problems existing in the community; it was therefore able to allocate resources to those areas where the need was greatest. This method was believed to ensure conformity with the true needs of the population and to facilitate evaluation in all phases of the health programme, in terms of the way the resources were used, how the activities progressed, and how the results were related to the goals. The risk of professionalization of the problems was thought to be diminished in this project since the needs of the population and the goals of the programme were determined by a health team working at grass-roots level. One important objective of the health programme was to provide health education to pupils so that they could themselves look after and be responsible for their own health. This model should also permit a more dynamic school health service, which would not merely protect the health of pupils in school but also outside it, and be able to take more vigorous action in the field of child health protection.

Although this model appeared to have certain advantages it was agreed that it could not function without proper control by the authorities; certain regulations and recommendations were needed with regard to means and methods of ensuring a minimum standard and uniformity throughout the country, while nevertheless allowing the school health teams a certain freedom of initiative.

It was also recognized that the needs and resources in the developing countries were quite different from those in the developed countries. However, even where resources were limited, it was important to allocate them so as to meet the true needs of the target population, namely schoolchildren. Thus, priorities both in health surveillance and in active prevention must be set individually by each country based on epidemiological studies performed in close

cooperation with the local authorities, medical as well as educational and political. The methodology and the scientific aspects of these studies should be the responsibility of medical schools, which should also be responsible for initiating research projects in the field of child care, as well as for undergraduate and postgraduate training in social and community paediatrics, including school health.

3.3 Evaluation of special school health problems

3.3.1 *Neurological problems*

It is clear that school performance and pre-existing neurological handicaps are not necessarily related. For example, it is well known that children who suffer from cerebral palsy may do quite well in school, just as apparently healthy children may be good or bad pupils. It is also well known that some clumsy children may be bad at games but be among the brightest pupils in the classroom. Thus, the relationship between school performance and neurological dysfunction, although a very complex one, is of great interest because it may have implications from the point of view of prevention. Any etiological factors identified can be eliminated. Children considered to be "at risk" from the point of view of behavioural problems can be followed up closely, so that if necessary help can be offered as early as possible. Some results of studies carried out at the Department of Development Neurology of the University of Groningen may be used to illustrate the difficulties encountered in attempting to analyse the relationships between neurological findings at various ages and those between neurological findings and behavioural and learning problems.

In a first follow-up study of 115 children who had been at obstetrical risk, a highly significant correlation was found between neurological findings in the neonatal period and at 1.5–4 years. A second follow-up study of 169 children, re-examined neurologically between the ages of 3.5 and 4.5 years, gave the same results. In a third follow-up study of 169 children aged 5–5.5 years, a weak but significant correlation was found for boys only, after the exclusion of those who had in the meantime suffered from some form of disease or trauma in which brain damage might have occurred, such as injury to the head, or illness associated with high fever. However, no significant correlation was found between the occurrence of intermediate complications and the neurological findings. In none of the three groups was a significant correlation found between the child's current behaviour and the neurological findings in the neonatal period or on follow-up. Among the neurologically abnormal children who were examined at the age of 8, there appeared to be more with a poor school performance than among the neurologically normal children, but this difference was too small to be used as a reasonable basis for prediction. Furthermore, it was found that the behaviour of neurologically abnormal and normal children differed in a free behaviour situation, but that the differences depended greatly on sex and type of activity.

In a population study on the occurrence of choreiform dyskinesia in schoolchildren, a preponderance of this type of dyskinesia was found in pupils of special schools when compared with children attending ordinary primary schools, but choreiform dyskinesia was also found in about 15% of the pupils of ordinary schools.[a] Kalverboer, Von Bernuth and Touwen (unpublished data) obtained similar results when comparing the occurrence of choreiform dyskinesia and mild dysdiadochokinesia in children with learning and behavioural problems, though of normal intelligence, and in pupils of an ordinary primary school. Although more pupils of special schools showed these signs of neurological dysfunction, the same findings were obtained in a small but substantial percentage of ordinary school pupils. Finally, it was found that, in a group of 31 children who had to be institutionalized because of severe behavioural and learning problems, 28 children had evident signs of minor neurological dysfunction. However, in 20 of these children the presence of other etiological factors could be demonstrated, while the parents of the remaining 11 children stated that serious family problems existed. It was not clear whether these problems were caused by the presence of the behaviourally disturbed child or whether they played a role in the genesis of the disruptive behaviour.

Thus, it may be stated that longitudinal studies do not provide evidence of direct correlations between signs of neurological dysfunction at the pre-school age and subsequent behavioural and learning problems but, on the other hand, children with learning and behavioural problems do show signs of neurological dysfunction more often than children without such problems. Consequently, it is only rarely possible to postulate that school problems are directly related to particular factors in pre-school life. It is also evident from several recent studies that social factors play an important role in deciding the final outcome of various adverse biological factors, such as perinatal hazards, and neurological dysfunction. Thus, for instance, the risk of complications associated with low birth weight, such as mental retardation, neurological disorders, or learning problems, is much greater in the lower than in the higher social classes.[b,c,d] In conclusion, then, it is clear that neurological disorders and perinatal hazards are only two of many possible factors that may be involved when a child has difficulties at school. The importance of slight organic

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[a] **Stemmer, C.J.** *Choreatiforme bewegingsonrust.* Groningen, van Denderen, 1964

[b] **Neligan, G.A. et al.** *Born too soon or too small.* London, Spastics International Medical Publications, Heinemann Medical Books – Philadelphia, J.B. Lippincott Co., 1976 (Clinics in Developmental Medicine, No. 61)

[c] **Kruuse, E. et al.** *Low birth-weight – a risk factor? Correlations between birth-weight, socio-economic status and school disorders.* Copenhagen, Forlaget Skolepsykologi, 1976. (In Danish with an English summary)

[d] **Saint-Anne Dargassies, S.** Long-term neurological follow-up study of 286 truly premature infants. I: Neurological sequelae. *Developmental Medicine and Child Neurology*, 19: 462 (1977)

brain damage seems to diminish as other factors, such as socioeconomic status, and parental education, attitudes and intelligence, come into play.

In discussing the need for screening in school for minimal brain dysfunction (MBD) or learning disorders, the Group pointed out that well-developed resources were needed for the assessment, treatment and follow-up of detected cases, involving not only medical and educational, but also social measures. It was also emphasized that it could be a drawback for a child to be labelled as having brain dysfunction at an early age. The school health services might perhaps instead simply wait for children with reading and writing difficulties to be referred to them by teachers, and then carry out a full investigation of these children, from the medical, psychological and social points of view. It was considered very important for the school physician to be an active participant in the care ultimately provided to these children, as regards, e.g., school placement, physical training, and physiotherapy. In this connexion, the Group unanimously expressed the opinion that handicapped children, if possible, should be allowed to go to the same schools as other children, provided that the required special resources were made available.

It was also recognized that children with minimal brain dysfunction and learning disorders also exist in developing countries, as well as children with other handicaps, but that, in these countries, other health problems, such as malnutrition, infections, and rickets, are so important that neurological dysfunctions are given a low priority.

3.3.2 *Visual disorders*

Visual disorders are very common in schoolchildren; figures exceeding 20% have been found in several studies. Many of these visual defects are not apparent from the outside and the children themselves do not always complain. It is sometimes the teacher who first suspects a visual deficiency when a child has difficulties in reading and writing and sometimes also behaviour or motor problems. How often these disorders occur and how often they are cured by wearing spectacles is, however, not known. Remarkably few objective studies have been published on the real importance of disturbed vision from the standpoint of children's health and performance.

A certain amount of inconvenience, though, must undoubtedly exist, and since the child's eyes provide him with one of the most important means of acquiring information, it is of course desirable for them to function correctly. A vision screening programme was therefore accepted by the Group as a necessary part of health surveillance at school. How high on the priority list this screening should come must, however, depend on the resources of the country or region in which it is to be performed. If possible, the initial time-consuming and difficult treatment of functional amblyopia, strabismus and certain other important eye disorders should have been completed when school begins. In addition, the best results from the point of view of visual prognosis are achieved

when treatment is instituted early. This means that the pre-school eyesight screening programme is of even greater importance. Screening should be repeated at school since a great number of refractive errors, mainly myopia, develop at puberty and prepuberty. The Group also stressed the special importance of looking for visual disorders, as well as for sensory disturbances of all types, in both mentally and physically handicapped children. In these already disadvantaged children, the difference between good and bad sensory function has particularly important consequences.

The methods of screening for visual disorders were not discussed in detail, but it was agreed that it was most important to test visual acuity and that any optically acceptable method, e.g., letters, E-hooks, or squares, would be satisfactory.

3.3.3 *Dental health*

It was agreed that the way to better dental health was through prevention, which in turn was based on nutrition, oral hygiene and fluoridation. It was also recognized that the bulk of dental health programmes should be carried out before children went to school. Evaluation of preventive programmes for pre-school children clearly shows that good dental health can be achieved for the majority of children in this age-group and that it can be maintained when they reach school age.[a] In school, the main task of dental health programmes lies in health education, i.e., in teaching children to be responsible for their own dental health. Such education is not necessarily the function of dentists but could very well be provided by auxiliary personnel, e.g., dental hygienists. In some developing countries, mobile dental clinics were reported to have visited schools and to have achieved good results.

Although it was realized that other dental problems, such as malocclusion and paradontitis, also exist in schoolchildren, it was concluded that caries are by far the most important problem, in terms not only of frequency but also of funds, manpower and treatment equipment required.

3.3.4 *Behavioural problems*

The problem of behavioural difficulties in schoolchildren is of particular importance in most European countries today. The fact that there has been a reduction in the incidence of somatic diseases, that more extensive schooling of longer duration has been introduced and that stress factors in the school situation are increasing have combined to lend added weight to these problems. It was agreed that dealing with behavioural problems should be considered a major task of school health programmes and that the entire school health team

[a] **Holst, K. & Köhler, L.** Preventing dental caries in children. Report of a Swedish programme. *Developmental Medicine and Child Neurology*, 17: 602 (1975)

should focus its attention on them. The school physician alone is seldom properly trained to deal with such problems, but should contribute by making his special medical and sociomedical knowledge available to the team.

A number of participants would have liked to see standards or limits of "normal" behaviour defined. It was, however, made clear that such standards could not be provided since "normality" in this field was relative and depended greatly on the social, educational, cultural, political and historical environment.

The risk of professionalization of behavioural problems was also mentioned, i.e., the definition and identification of problems so as to fit in with the prior knowledge and training of health professionals. Such a development should be closely watched, because this model is seldom in conformity with the true needs of the population but tends to lead to an overestimation of needs. The risk of professionalization exists not only for doctors but also for teachers, psychologists and social workers. Other professionals have, in fact, often copied the medical model of explanation and tried to apply biological etiological thinking to behavioural and psychological phenomena; this often leads to completely inappropriate means of treatment and prevention.

3.3.5 *Developing countries*

Schoolchildren may be regarded as a neglected group in most developing countries and school health programmes are usually given secondary or even lower priority. On the other hand, several surveys carried out in developing countries have shown that both acute and chronic diseases are common among schoolchildren.

Although many similarities with the developed countries can be found in the epidemiology of children's diseases in developing countries, e.g., as regards traffic accidents, suicide, dental decay, and behavioural disorders, it is clear that the latter countries will have important problems that are specific to them, e.g., malnutrition, helminthiasis, and streptococcal infections. It is also clear that the schools could provide a good starting point for short campaigns against these health problems. Schools could, for example, provide excellent opportunities for practical health education, which, in the area concerned, could break through the ignorance which exists on health topics and which is passed on from one generation to the next. It was, of course, appreciated that education alone is not enough in combating disease: poverty, the major handicap of the people of the developing countries and the major cause of ill-health among them cannot be eliminated by education. Provided education is relevant to the needs and resources of the people, however, it can contribute to improved health.

If a closer scrutiny of health problems is required, epidemiological studies should be carried out by or in close cooperation with the local authorities, medical as well as social and political. The medical schools should be responsible for initiating and carrying out research projects in child health and

should also act as centres for undergraduate and postgraduate training in social and community paediatrics, including school health. This could be one way of helping to shift the emphasis from hospital-centred medical training and research towards primary health care and basic health services, in accordance with current WHO policy.[a]

In this connexion the problem of migrant workers was discussed and it was appreciated that this was a quantitatively major problem in a large part of Europe, and one that had been the subject of meetings arranged both by WHO and by other international agencies. At one recent conference in Ankara, arranged by the International Children's Centre, Paris, and the Turkish and International Children's Centre, Ankara, problems specific to the countries of origin were discussed. One of the conclusions reached in several studies in this area is that the movement of labour does not in itself affect the children's health to any considerable degree, although it seems that children of migrant workers are not looked after very well abroad, and not as well as the children of the host country itself. These children, for example, tend to be left to their own devices and to be isolated from their peers. On the other hand, these migrant children do enjoy the privileges of an industrialized country, such as better food, better housing, regular schooling, etc.

In some countries, it appears that children left behind when the parents migrate encounter great difficulties at school. In others, many children returning home from abroad lacked an adequate knowledge of their mother tongue, which in turn led to social and educational complications.

4. SCHOOL HEALTH PERSONNEL AND THE SCHOOL HEALTH TEAM

In all countries, including the developing ones, the tasks of the school health services have become so numerous and so diversified that they cannot possibly be dealt with by a physician alone or solely by medical personnel. Instead, it is becoming increasingly clear that such services must be based on co-operation and teamwork. Such a school health team may vary in its composition, depending on the requirements, but usually consists of a doctor, a nurse, a teacher, social workers, and a psychologist. Other specialists may be included when needed.

4.1 Medical staff

Although other aspects of the health and welfare of children are now covered, a great part of the doctor's time is still taken up by routine physical

[a] Resolution WHA 29.74 (WHO Handbook of Resolutions and Decisions, Volume II, second edition, 1977, pp. 21–22)

examinations. However, the value of such periodic medical examinations has not been properly documented. Studies in this field give an almost depressing picture of the efficiency and usefulness of such examinations. It has been found that screening methods can also be used more extensively in the surveillance of the physical health of schoolchildren. Successful attempts have therefore been made to let nurses make short physical appraisals on the basis of standardized questionnaires and observation forms. Based on these observations, the doctor can make an assessment of selected children, so that the clinical examination then serves as a purposeful diagnostic method. A reduction in the number of mass physical examinations will mean that more of the school physician's time and attention can be given to important tasks, which are now often neglected, e.g., to the health education of both teachers and pupils, and to vocational guidance. It may also mean that more time will be found for increased medical attention within the school setting to children with chronic diseases and handicaps, and perhaps also for improved treatment of sick children.

It was strongly emphasized that the school physician was an extremely important member of the school health team. A trained and experienced professional was urgently needed in schools to deal with medical and hygiene problems and to assist pupils medically. It was, however, not necessary for the physician to be the leader of the team. It was thought that the school physician should cooperate very closely with the school but it was equally necessary for him to be well acquainted with health problems and with ways of dealing with them outside school. To be able to cope with the work in school, a full-time physician should serve not more than 1500–5000 children depending on the type of society, the needs of the children and the assistance provided by other health workers. It was also recommended that a part-time school physician should work in the school at least once a week. In order to improve the professional abilities and status of the school medical officer, a multidisciplinary background, including clinical work or research would appear desirable.

4.2 Sociopsychological staff

As previously mentioned, there has been, in most industrialized countries, a shift of emphasis in school health programmes, from purely somatic health surveillance to a more sociopsychologically oriented approach. This means that social workers and psychologists have come to play an increasingly important role in schools and have become highly useful members of the school health team. As on so many previous occasions in other connexions, the Group also recognized the immense importance of the school nurse, who not only had medical qualifications and was present in school all day, but was also a protector, a mother figure capable of giving the children help and comfort. In the experience of many doctors, teachers, parents and children,

the quality and acceptance of school health services stands or falls with the interest and commitment of the school nurse.

In many instances where professionals of different kinds work together in an organization, each does what he has been trained to do, independently of the others. Teamwork, however, means working together, each member of the team contributing his knowledge and cooperating in order to achieve a common purpose, more or less regardless of personal and group interests. This kind of work requires far more training but is usually more successful in solving the many complex health problems of schoolchildren.

It was, of course, fully appreciated that the teacher's main task is to impart knowledge and skills, but it was nevertheless agreed that unique opportunities are open to him for detecting, treating and preventing health problems in the children. Many teachers do accept that function and perform it effectively, but many of them would like to have a greater knowledge of medicine, a desire also shared by social workers and psychologists.

The Working Group therefore recommended that postgraduate courses in paediatrics and social paediatrics should be offered to nonmedical members of the school health team, and should be organized and encouraged by the authorities.

A Swedish university course of this type on the pedagogic and social paediatric aspects of children's problems was described. It is intended for professionals working with children – teachers, social workers, psychologists, nurses, doctors – and is designed to give them a comprehensive view of children's problems and living conditions in modern industrialized society, and to show how these problems are affected by the micro- and macro-environment, and how they can be solved with the knowledge available at the present time.

4.3 Parents and pupils

Throughout the discussions on team work it was strongly emphasized that the cooperation and help of the family, including both parents and children, was a necessary part of all school health work. This is so, not only because the ultimate responsibility for the child – morally, emotionally and legally – must always lie with the parents, but also because the family represents the target population whose health needs are to be satisfied. If the school health services are designed to meet the true needs of this target population, and not merely to enable the school health staff to make use of their professional training, the chances of achieving the aims of these services will be increased.

5. THE SCHOOL HEALTH SERVICES WITHIN THE CHILD HEALTH SYSTEM

It is obvious that many different kinds of school health systems exist in the Region, and that methods of integrating these systems into other, larger, health systems differ.

5.1 Models of integration

A simple model of various school health systems and their integration was found to be most useful in the discussion (Fig. 1).

Particular interest was shown in the totally integrated system (E in Fig. 1) used in Czechoslovakia. In this system, a community paediatrician cares for all children in his area, from the time they are born until they are 15 years old, whether they are healthy or sick, and whether they live at home or in some type of nursery or school. The number of children assigned to each paediatrician is now 1 450 but it is planned to reduce this figure to 950. The paediatrician devotes a major part of his time to preventive care, during both the preschool and the school years.

The main advantages are said to be:

(1) availability of care to all children;

(2) horizontal integration (with other agencies);

(3) vertical integration (continuity from birth to adolescence).

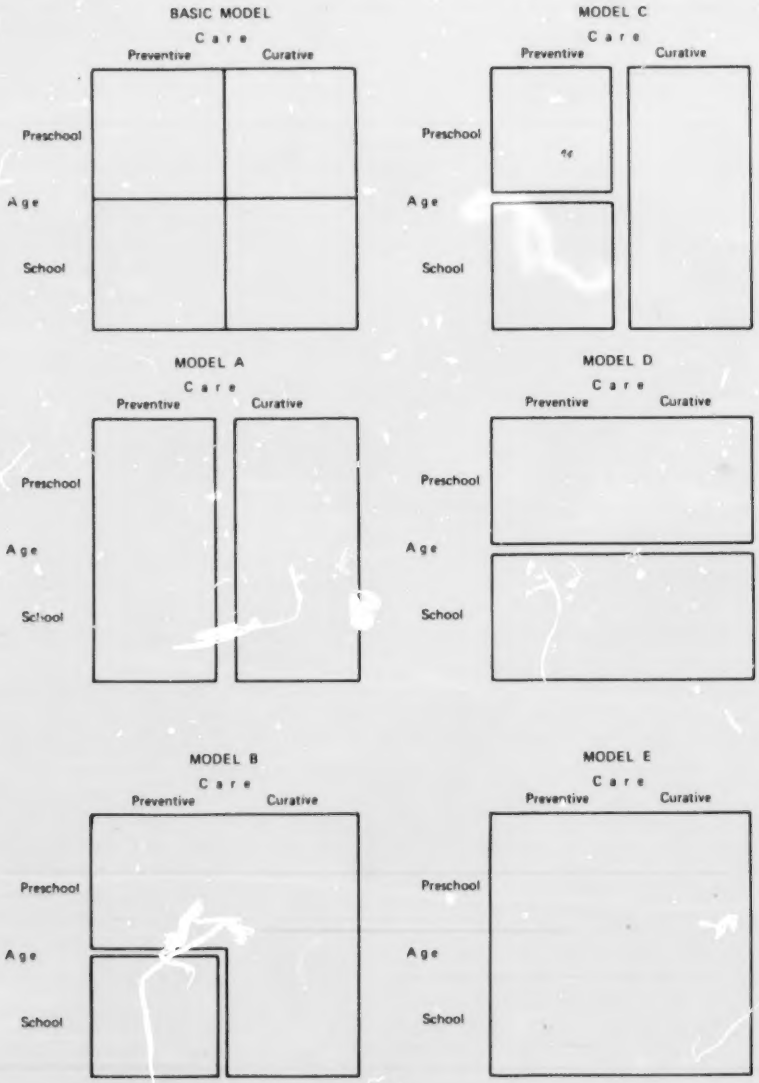
The system was also said to give satisfaction to both consumers and producers, i.e., parents and children and doctors.

The difficulties that have to be overcome in this system are, firstly, a tendency for treatment to take priority over prevention, which is a consequence of the emphasis given to the former in medical education, and secondly, a lack of interest in mental health.

It was concluded that this system appears to promote continuity, comprehensiveness and integration, and that it should be of great interest to all countries, including the developing ones. It was recommended that WHO should carefully study the different systems of school health services in the Region and identify both the good and bad features of each, thus making it possible for member countries to select those elements which are relevant to their particular type of society.

It was recognized, however, that every health system was closely connected with the country itself, its history, traditions, politics and society. A completely new system, alien to the structure of that society, would,

Fig. 1. Models of integration



therefore, be bound to fail. The Group strongly emphasized that, whatever system of school health services was used, it was of the utmost importance that it should not contribute to the isolation and specialization that have so far been distinctive features of schools all over the world. It should, instead, work in close cooperation with the health system for the family. It is becoming increasingly obvious that children and their health, and therefore also the care of children in health and disease, must be seen in the context of society as a whole. Although children spend a great part of their life in school, most of their health problems originate, exert their effects and are treated outside it. As regards the question of making it compulsory for parents and children to participate in the health system, the Group considered it preferable to limit such compulsion, if possible, to a small number of measures. Instead, it was recommended that the interest and willingness to cooperate, even of those families that were difficult to make contact with should be gained by offering them highly attractive services.

5.2 Whole day and 5-day-week schooling

In increasingly affluent societies, spare-time interests and activities tend to be of ever greater importance, and consequently the topic of the reduction of the working week is of considerable relevance to any discussion of standards of living. As early as 1962 the International Labour Organisation (ILO) established the 40-hour working week as a recommended target, and in an increasing number of countries these working hours are compressed into a 5-day week.

It is clear that schools must be subject to continual change to keep pace with the changing society in which they operate. The key position of schools in society and the nature of their activities emphasize the importance of, among other things, coordinating school hours and working hours in industry and commerce. It is, however, quite clear that the introduction of a shorter school week has certain implications, including some of a more general character and others specific to the school environment.

The planning of teaching and of teaching hours has always been determined by a number of different factors, most of which originate outside the school, e.g., the yearly agricultural cycle, the need for children to participate in production, transport difficulties, and so on. Only fairly recently have questions of a pedagogic, psychological and sociological nature, together with matters relating to the pupils' health and development, been assigned any appreciable importance.

In the modern school, the process of imparting knowledge and skills should also assist in the development of the children's character, and in their social and intellectual development; these are among the school's most important functions. It was recognized by the Group that it is extremely difficult to provide straightforward rules governing the working hours of

schools without neglecting or failing to take sufficiently into account certain factors of importance to the school, the pupils, the teachers or the parents, factors which are interrelated and sometimes have conflicting effects.

5.2.1 *Educational aspects*

In the process of learning, it is important that the pupils should not only be able, but also prepared and willing, to learn. Therefore, as a general pedagogic-psychological principle, the school's working hours should be arranged in such a way as to promote a positive attitude towards schoolwork among the children. This means, for instance, that a long series of working weeks, interrupted only by free weekends, should be avoided, as should a concentration of lessons and homework on certain days. On the other hand, in countries where the 5-day week has been introduced, the long free weekends seem to offer such great advantages to children that their schoolwork and, hence, the learning situation, are greatly improved despite the unavoidable concentration of lessons and homework.

The relation between the results of teaching and the time taken up in the process, though positive, is complicated. It seems that better results are obtained if the subject taught is divided up logically into meaningful parts and if the work is performed over a number of periods instead of being compressed into one or only a few periods. There is, however, hardly any evidence to show that the results of teaching would be poorer simply because a certain number of lessons previously spread over a 6-day week were concentrated into a 5-day week, since so many other factors are of greater importance in the acquisition of knowledge and skills. Furthermore, the introduction of a certain amount of variation, e.g., the inclusion of different subjects and of games, and the use of varied methods of work, can make it easier for the pupils to enjoy schoolwork, thereby counteracting any negative effects that a slight increase in the length of the school day might have.

5.2.2 *Medical aspects*

From the point of view of the pupils' health, it is, of course, of the utmost importance that the workload (schoolwork and homework) should not be too heavy. The introduction of 5-day week schooling, or whole-day as opposed to half-day schooling, should therefore not imply an increase in fatigue, leading to difficulties in maintaining concentration and attention, and perhaps to psychosomatic symptoms caused by stress. These possible health effects are important, however, and experts on school health should naturally be consulted when changes in school hours are proposed. Thus, when 5-day week schooling is introduced, it is necessary to rearrange the terms by shortening the vacations and reducing the number of school holidays, so as to compensate for the Saturdays lost.

As a rule, countries which are considering changes in the hours of schooling should carry out pilot studies in order to compare the short-term and long-term effects of the different proposals on the pupils' working capacity, powers of concentration, and health. The experience of Sweden has shown, for instance, that when excessively long hours were avoided, very few, if any, health problems could be attributed to the 5-day school week as such.

5.2.3 *Social aspects*

Although its main task is to impart knowledge and skills, the school, as an agency with far-reaching social responsibilities, is now expected to perform a wide range of functions. In many countries the school now occupies, or is intended to occupy, a prominent place in social, family and cultural life.

A school that performs these new functions will have greater opportunities to support parents in their efforts to advance their children's education and development. It is important, therefore, that both the school and the home should work together by ensuring that school hours and vacations are coordinated with the parents' working hours and holidays. It is also desirable that a certain degree of uniformity of school hours for different kinds of schools should exist within a given society, thus giving children increased opportunities to be with their families and friends and more time with them for hobbies, rest and relaxation. Thus, although the full consequences of whole-day and 5-day-week schooling for the children's health and wellbeing still remain to be determined, a sensible form of educational organization, which takes into account the need for variation in subjects, methods and activities, would seem to make it possible to obtain the social benefits of coordinating school hours with the hours of work in industry and commerce, without endangering the children's health.

Finally, it was suggested that WHO should organize a special working group on the school day, its content and organization, considered from the educational, medical, social, administrative and nutritional points of view.

6. CONCLUSIONS AND RECOMMENDATIONS

(1) Although the main purpose of all preventive care is humanitarian, and not economic, it is impossible in any society to avoid critically comparing the resources allocated and the results expected. It is therefore also essential to evaluate school health programmes and their effects in promoting, preserving and restoring the health and functional capacity of pupils.

(2) The objectives of school health programmes must be clearly defined and expressed; it is not sufficient merely to describe the activities contained in the programme. The objectives and priorities of national programmes should be decided individually by each country.

(3) School health programmes are governed by the regulations and recommendations of the authorities and should be based on the true needs of the target population, as defined by the health team at the community level.

(4) If possible, school health programmes should not only protect the health of pupils in school, but also take more vigorous action to protect the health of children in the community.

(5) Reliable information on the prevailing health problems is usually obtained by means of epidemiological studies. Such studies should be performed by, or in close cooperation with, the local medical, social and political authorities. Medical schools also have a major responsibility for initiating research projects in child care as well as for undergraduate and postgraduate training in school and community paediatrics, including school health. This is also a suitable field for international cooperation.

(6) Neurological disorders and perinatal hazards are only two of many possible factors that may underlie difficulties at school. The importance of slight organic brain damage seems to diminish as other factors come into play, such as socioeconomic status, and parental education, attitudes and intelligence.

(7) Handicapped children should preferably be allowed to attend the same schools as other children, provided that the requisite special resources are made available.

(8) Vision screening programmes are a necessary part of school health surveillance although the best results from the point of view of prognosis are obtained when children with eye disorders are detected and treated at the pre-school age. In already disadvantaged children with mental or physical handicaps, the detection of sensory disturbances is of special importance.

(9) The bulk of dental health programmes based on nutrition, oral hygiene and fluoride administration, should be carried out before the children go to school. In school, the most important task is dental health education, i.e., teaching children to be responsible for their own dental health.

(10) Normal behaviour cannot be defined, since standards in this field are relative and depend very much on the social, educational, cultural, political and historical environment.

(11) In all Member States of the Region, including the developing countries, the tasks of school health programmes have become so great and so varied that a single doctor or small medical unit cannot cope with them. Instead, a school health team should be formed, usually consisting of a doctor, a nurse, a teacher, a social worker, and a psychologist. Postgraduate courses in medicine (paediatrics, social paediatrics) should be offered to non-medical members of school health teams.

(12) Family cooperation and assistance in school health work is strongly advocated, not only because the family is ultimately responsible for the pupil – morally, emotionally and legally – but also because the family represents the target population whose health needs are to be met.

(13) It is important that school health programmes should give pupils enough health education for them to be able to look after, and feel responsible for, their own health. This includes an adequate knowledge of the health services available.

(14) Since every school health system has its individual advantages and disadvantages, international comparative studies should be carried out so as to allow Member States to select from each system those portions relevant to their particular type of society.

(15) Although children spend a large part of their life in school, most health problems originate, exert their effects and are treated outside school. School health services should, therefore, try to coordinate and integrate their work with that of other agencies responsible for public and child welfare.

(16) It would appear to be possible, with a sensible form of educational organization, and taking into account the need for variation in subjects, methods and activities, to obtain the social benefits of school hours coordinated with the hours of work in industry and commerce, without endangering the children's health. Experts on school health should be consulted when changes in school hours are proposed.

Annex I

THE PRESENT EUROPEAN SITUATION IN SCHOOL HEALTH STATISTICS

Professor E. Maier[a] and Dr J.-C. Vuille[b]

Plan of the study

In 1974 the WHO Regional Office for Europe decided to carry out a study on the present European situation in school health statistics, with the main purpose of collecting information on systems suitable for continuous recording of data from well-baby clinics, and pre-school and school health examinations. For this study, the following eight countries were selected and were visited by two WHO consultants: Austria, Finland, France, German Democratic Republic, Federal Republic of Germany, Poland, Switzerland, and United Kingdom. During the preparatory work it soon became evident that a statistical system linked to a health service cannot be analysed independently of the basic structure and functions of that service. It was therefore decided that the study should cover these aspects of school health services as well. Documentation and statistics are not considered primarily as a means of providing the authorities with a wealth of data to be published in comprehensive statistical year-books, but rather as a necessary aid in the continuous improvement and strengthening of the health care delivered to the individual child. Emphasis was therefore placed on the various aspects of collaboration and information exchange between the different persons and agencies engaged in the health care of children. It was also planned to examine the interrelationship between school health statistics and other public information systems relevant to the health of children.

Methods

The aim was to gather the necessary information from the eight countries through interviews with prominent professionals in the fields of school health, health service administration, health statistics and epidemiological research. In order to ensure the highest possible level of comparability between the countries, a questionnaire was established covering the main areas mentioned in the previous section. In constructing this questionnaire,

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an earlier report[a] served as a guideline. The answers provided by the persons interviewed were either entered on the partly precoded interview form, or – in the case of more extensive descriptions – protocolled in detail.

Judgements and opinions appearing in the text represent the personal comments of the rapporteurs if, and only if, this is explicitly stated. In all other cases, the opinions are those of the persons interviewed.

Conclusions

Conflicts in existing school health services

A general conclusion from this study is that none of the eight countries has as yet developed a nationwide system of school health statistics capable of fulfilling more than the most elementary requirements laid down in the report previously mentioned. Though most authorities consider systematic data collection and the use of modern methods of data processing to be very important tools in the planning of more effective health services, there is still a huge gap between the intentions and what has so far been achieved in reality. If the improvement of the state of health and wellbeing of children is taken as the ultimate goal to be reached through changes in the environment, the educational process, and the health services so as to meet the actual needs as revealed by the statistics, then it can safely be stated that none of the information systems studied has as yet proved its capability to make a significant contribution in this respect. If changes do occur – whether beneficial or detrimental – they are usually the result, not of statistical evidence, but rather of political or economic forces or the personal enthusiasm of outstanding individuals. A number of very promising developments within the field of information systems were studied at various centres. Most of them, however, were still *in statu nascendi* and had thus not yet had a fair chance to demonstrate their effectiveness. It appears that the first positive results, linked at least in part to systematic data collection and analysis, may be expected in connexion with the early detection of abnormalities, and the referral, follow-up and promotion of the schooling of the handicapped.

The difficulties encountered in improving the effectiveness of statistical systems are not primarily due to technical deficiencies, but – in the opinion of the rapporteurs and others – to a series of conflicts which will have to be resolved before any significant improvements may be expected from technical advances (see also the report previously mentioned). The quality of the statistics depends upon the quality of the documentation and the quality of the documentation, in turn, is directly correlated with the quality of the school health services. A good school health service needs

[a] Unpublished working document WHO/HS/NAT.COM/74.319

satisfactory documentation, but not necessarily sophisticated statistics. Some very good school physicians consider their time too valuable to be devoted to statistics. They believe that work on statistics is wasted. They doubt the value of epidemiological statistics derived from physical examinations by school physicians. On the other hand, the validity of the statistics depends on the reliability of the school physicians. We can hope to obtain valid statistics only if school physicians are seriously interested both in practical health care for each individual child and in statistics.

Conflicts are present in the existing school health services which make the task of school physicians difficult. Some of these conflicts can have a negative influence on the quality of work. Unhappy doctors often make for bad statistics. One such conflict is created by the fact that most school physicians are not allowed to treat the diseases they diagnose. Many school physicians are not satisfied with this situation, especially those who are not allowed, because of their position as full-time health officers, to have a private practice. Other full-time health officers without private practices are satisfied, however, because of the other responsibilities assigned to them, e.g., the special care of handicapped children, the care of children from problem families, or special important tasks on behalf of the authorities.

In some countries this problem has been overcome by employing school physicians on a part-time basis and allowing them to retain a private practice. In other countries it would appear that this problem either has not been recognized or does not exist. Another conflict often seen is the lack of official regulations for the work, based on critical evaluation. It seems that in some countries no analysis has been made of what can be expected from the school physician under given circumstances and in relation to a given task. As an example, it is common to find that quantity of work is given greater importance than quality. Occasionally, official regulations are made, not by school physicians, but by other members of the staff who are often misinformed as to the duties of a school physician.

The routine examination of large numbers of healthy children, where the main purpose is to find "cases", is a frequent source of dissatisfaction, since job satisfaction is obtained only by the occasional discovery of a hitherto unrecognized anomaly. Unconsciously, the physician may increase his satisfaction by assigning pathological significance to unimportant findings. Obviously, this practice diminishes the value of any statistics derived from such data.

Still another conflict arises from the fact that the school physician rarely sees the results of his statistical work. There is a lack of feedback. In other cases, he sees the results, but is not able to use them because they are not suited for his purpose. School health statistics must be useful, both for those who provide the original data and for those for whom the statistics were originally prepared. Only when the interest of the school physician is kept alive will he be inclined to take an active part in checking and improving the statistics.

Finally, a lack of interest in modernizing the techniques is a logical consequence of the view that the statistics are useless. As a result, many school physicians still work with outdated health records, and the methods of gathering the data are often irrational.

Much of what has been said above concerning physicians is equally valid for other professionals within the school health team. In some countries many of the conflicts mentioned are further aggravated by the fact that the paramedical personnel are not allowed to act on their own responsibility. They could make an important contribution in preparing the statistical data, but their views are not heard when the practical aspects of the procedure are being considered.

Proposed solutions

From what has been said in the preceding section it is clear that the most important step to be taken is to make statistics more relevant to those providing the primary data (school physicians and other professionals). The following proposals should aid in achieving this goal:

(1) Let workers at the local level see their own statistics. Discuss the possible reasons for unexpected figures. Which data may be considered as reliable? Where is it necessary to be cautious in interpretation? What are the implications for practical work?

(2) Stimulate research activities. Many important problems concerning the health of schoolchildren have been studied by research institutions. Unfortunately, this research is often carried out by people who are not actively engaged in practical health care, and the ordinary staff may be ignored. In many of the centres visited close cooperation had been established between a research institution and the school health service, with the same person sometimes being in charge of both bodies. Such continuous collaboration, which requires the members of the school health team to undertake a profound analysis of one specific problem at any given time, is extremely stimulating and increases the understanding of the importance of the careful and systematic collection of data.

(3) If new documents are designed or new procedures of data collection introduced, discuss the practical aspects with those directly involved. It should be the rule that anyone who wants to introduce an innovation should have to prove that his idea has either not yet been tried elsewhere, or that it has been tried and been found successful.

(4) The role of the traditional school doctor is being challenged. In some of the countries visited school doctors are going to be replaced by district

paediatricians or general practitioners who will also be responsible for curative care. This trend towards the integration of the preventive and curative services is not unique, but the opposite policy has many advocates as well. The advantages of a close connexion between preventive and curative activities are obvious. If there is shortage of manpower, however, a totally integrated system cannot usually maintain a high standard of preventive medicine. There are thus certain arguments in favour of separate services, provided that collaboration is satisfactory and that a satisfactory information system exists. One suggestion is that the school physician should be relieved of all responsibilities for the routine health supervision of the pupils, and should work essentially as a school hygienist, i.e., a specialist in the field of the interrelationships between biological factors, educational activities and environmental conditions. His primary function would thus be general supervision, planning and giving advice to the school authorities; he would see individual pupils only in special cases where there were health-related school problems. Another view, however, is that continuous clinical practice is essential in order to enable the school physician to maintain a high professional standard. These views are not necessarily contradictory, but might perhaps be reconciled with one another if organizational solutions could be found whereby school doctors might be able to perform more than one function.

(5) Another traditional feature, namely the hierarchical structure of school health services, in which the physician is the only professional permitted to act on his own responsibility, must be changed. Although the need for a team approach is recognized in most official texts and declarations, it is very rare to find a truly multidisciplinary team. The necessary changes clearly cannot be brought about through official regulations, but rather by means of a series of limited advances at the local level. One possibility would be to undertake a profound analysis of a multidimensional problem, e.g., school failures, to which members of all the professions concerned – paramedical, psychological, educational and social – could make their own specific contribution.

(6) The working conditions of the staff should be reviewed and, if necessary, brought into line with explicitly stated minimal norms. Practical aspects of routine procedures should be rationalized as far as possible. As an example, activities or findings should be enumerated continuously and not retrospectively. Weeks of purely clerical work at the end of the year "for the sake of statistics" certainly do not improve the motivation of the staff.

Specific recommendations

The rapporteurs have had the opportunity of studying certain very promising new developments, which might perhaps serve as guidelines to those who intend to adapt their own school health services to meet the new challenges. The most important of these modern trends are as follows:

(1) The emphasis is definitely moving away from the detection of anomalies in schoolchildren and towards more active concern with pre-school children. The school physician and his team should expand their field of action and try to detect and treat as many of the health problems as possible before children enter school.

(2) Routine medical examinations of pre-school and schoolchildren are being replaced by a series of specific screening tests, designed for the early detection of certain well-defined anomalies and performed at selected key ages. Many of these tests can be performed just as well by auxiliary personnel as by physicians. The physician's main task will be the summing-up and interpretation of the results, and the communication of the implications to the parents and/or the child himself.

(3) Operational definitions of findings and diagnoses and of criteria for specific measures should be established. These definitions must necessarily be so detailed as to appear trivial. The continuous critical evaluation of the validity of the definitions is important as well as repeated checks on the compliance of the staff with these instructions. The quality of the statistics may be improved significantly if findings without any practical implications are disregarded. Only true health problems or known risk factors should be recorded.

(4) The basic structure of the health services will obviously be different in different countries, and no one information system can possibly be suitable, even after modification, for every such structure. This should not be taken to mean, however, that every country will have to develop its own system and to repeat all the errors which others have already made. A comparative report on the technical aspects of existing systems, prepared under the auspices of WHO, would be extremely valuable for all those intending to strengthen their system of school health statistics.

Annex II

LIST OF PARTICIPANTS

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OTHER REPORTS IN THE FIELD OF SCHOOL HEALTH*

Problems of children of school age (5–9 years). Report on a Working Group. 1976 (ICP/MCH 004)

Problems of children of school age (10–13 years). Report on a Working Group. 1977 (ICP/MCH 006)

Problems of children of school age (14–18 years). Report on a Working Group. 1978 (ICP/MCH 010)

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* A limited number of copies of these reports are available to interested persons, on request, from the Regional Office for Europe, World Health Organization, Scherfigsvej 8, 2100 Copenhagen Ø, Denmark.